

Work–life balance, job satisfaction, and professional commitment in private dental clinics: Evidence in the ERA of digital transformation and AI-driven healthcare

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Abstract: This study investigates the effects of work–life balance and job satisfaction on professional commitment among employees in private dental clinics in Hanoi, Vietnam, within the context of digital transformation and AI-driven healthcare. Drawing on Social Exchange Theory, the Job Demands–Resources (JD–R) model, and Herzberg’s two-factor theory, the study develops a framework to explain how workplace conditions influence employees’ professional commitment. A quantitative research design was employed, with data collected from 305 employees using structured questionnaires. The proposed relationships were examined using Cronbach’s alpha, exploratory factor analysis (EFA), Pearson correlation analysis, and multiple regression analysis. The results reveal that both work–life balance and job satisfaction exert significant positive effects on professional commitment, with work–life balance demonstrating the stronger influence. These findings indicate that supportive working conditions and employee well-being are essential for strengthening workforce stability and professional attachment in private dental clinics. The study extends the literature by providing empirical evidence from an emerging healthcare market undergoing digital transformation and AI adoption. The findings offer practical implications for healthcare managers and policymakers in designing human resource strategies that enhance employee commitment, service quality, and sustainable organizational performance.

Keywords: Artificial intelligence (AI), Business administration, Human resource management, Job satisfaction, Labor economics, Professional commitment.

1. Introduction

The rapid development of private healthcare services has significantly transformed labor dynamics in emerging economies, particularly in specialized sectors such as dental care. In Vietnam, and especially in Hanoi, the private dental clinic market has experienced strong growth, driven by rising income levels, increasing awareness of oral health, and growing demand for aesthetic dental services. This expansion has intensified competition and created a highly segmented market structure, requiring clinics to enhance service quality and workforce stability.

From a theoretical perspective, professional commitment plays a critical role in shaping employee performance, retention, and service quality. In healthcare settings, where human capital is a key determinant of service outcomes, understanding the factors influencing professional commitment is

essential. Prior research highlights the importance of work–life balance and job satisfaction as key determinants of employee attitudes and behaviors.

In recent years, digital transformation and artificial intelligence (AI) have begun to reshape healthcare delivery, including dental services. Technologies such as digital imaging, AI-assisted diagnostics, and patient-management systems have improved efficiency and service quality. However, these changes also increase job demands, requiring employees to continuously adapt to new technologies and workflows, thereby affecting their work–life balance and job satisfaction.

Empirically, while numerous studies have examined employee commitment in general service sectors, limited research has focused specifically on private healthcare settings in emerging markets. In particular, the interaction between work–life balance, job satisfaction, and professional commitment in the context of digital transformation remains underexplored.

Therefore, this study aims to investigate the effects of work–life balance and job satisfaction on professional commitment among employees in private dental clinics in Hanoi. The findings are expected to provide valuable insights for both academic research and managerial practice in a rapidly evolving healthcare environment.

1.1. Objectives of the Study

To address the above research gap, this study aims to achieve the following objectives:

First, to examine the effect of work–life balance on professional commitment among employees working in private dental clinics in Hanoi.

Second, to investigate the effect of job satisfaction on professional commitment in the context of private dental healthcare services.

Third, to provide practical implications for clinic managers in improving employee well-being, job satisfaction, and long-term professional commitment amid digital transformation and AI-driven healthcare development.

2. Theoretical Background and Hypothesis

2.1. Theoretical background

2.1.1. Social Exchange Theory

Social exchange theory posits that relationships between employees and organizations are based on reciprocal exchanges of benefits and obligations [1]. When employees perceive fair treatment, support, and recognition, they are more likely to reciprocate with positive attitudes and behaviors, including higher commitment.

In this study, social exchange theory explains how job satisfaction influences professional commitment. Employees who experience supportive working conditions and recognition in dental clinics are more likely to develop a strong attachment to their profession.

2.1.2. Job Demands–Resources (JD-R) Model

The JD-R model suggests that employee well-being and performance are shaped by the balance between job demands and available resources [2]. High job demands can lead to stress, while adequate resources enhance motivation and engagement.

In the context of dental clinics, work–life balance represents a critical resource that helps employees manage job demands. A favorable balance reduces burnout and supports sustained professional commitment.

2.1.3. Herzberg's Two-Factor Theory

Herzberg's theory distinguishes between hygiene factors (e.g., salary, working conditions) and motivators (e.g., recognition, meaningful work) [3].

In this study, job satisfaction reflects both intrinsic and extrinsic factors. In healthcare environments, intrinsic factors such as meaningful work and professional pride are particularly important in shaping commitment.

2.2. Literature Review

Recent studies have increasingly emphasized employee well-being in the healthcare sector. For instance, Nguyen et al. [4] find that work–life balance significantly enhances employee retention in healthcare organizations. Similarly, Bakker and Demerouti [2] show that job satisfaction is a key predictor of professional commitment among medical staff.

International studies also highlight similar patterns. For example, Albrecht et al. [5] demonstrate that job resources, including work–life balance, positively affect engagement and commitment. Meanwhile, Dyrbye et al. [6] emphasize the role of psychological well-being in healthcare workforce stability.

Besides, Meyer et al. [7] developed and validated the three-component model of organizational and occupational commitment. Their findings indicated that stronger occupational commitment is associated with higher job satisfaction and greater willingness to remain in the profession. Nevertheless, the study focused primarily on commitment constructs rather than on the role of work–life balance.

Wallace [8] investigated the relationship between organizational commitment and professional commitment in professional organizations. The findings showed that professional commitment and organizational commitment are complementary rather than conflicting constructs, both contributing to employees' long-term attachment to their profession. However, the study did not consider work–life balance as an antecedent of professional commitment.

Lee et al. [9], through a meta-analysis, demonstrated that professional commitment is positively associated with job satisfaction, organizational commitment, and job performance, while reducing employees' intention to leave. These findings suggest that enhancing job satisfaction may strengthen professional commitment across various occupations. However, evidence from private healthcare organizations remains limited.

Crawford et al. [10] investigated the relationships between professional commitment and organizational commitment among project management professionals. Their findings indicated that professional commitment positively influences organizational commitment and employees' willingness to remain in their profession, suggesting that both forms of commitment are complementary rather than conflicting. Nevertheless, the study focused on project management professionals and did not consider work–life balance or healthcare contexts.

Greenhaus and Allen [11] reviewed and extended the work–family balance literature, arguing that employees who successfully balance work and family roles are more likely to experience higher job satisfaction, well-being, and sustainable career development. Their conceptual framework has become a fundamental reference for work–life balance research. Nevertheless, the review does not investigate the mechanisms through which work–life balance affects professional commitment in healthcare professionals, particularly within private dental clinics operating in the era of digital transformation and AI-driven healthcare.

Chang et al. [12] examined the relationships among professional commitment, organizational commitment, and turnover intention among IT professionals. The results demonstrated that stronger professional commitment significantly reduces employees' intention to leave while strengthening organizational attachment. However, the study mainly emphasized turnover behavior and did not investigate the mediating role of job satisfaction or the impact of digital healthcare environments.

Haar et al. [13] examined the relationship between work–life balance and employee outcomes across seven countries. Their findings revealed that work–life balance significantly improves job satisfaction, life satisfaction, and psychological well-being, suggesting that employees who achieve a better balance are more likely to develop positive work attitudes. However, the study did not investigate professional commitment, particularly in healthcare settings.

Gedefaw et al. [14] assessed the level of professional commitment among healthcare professionals working in public health facilities in Ethiopia. The findings revealed that professional commitment was positively associated with organizational support, job satisfaction, and favorable working conditions, highlighting the importance of organizational factors in sustaining healthcare workforce commitment. Nevertheless, the study focused on public healthcare institutions and provided limited evidence for private dental clinics experiencing digital transformation and AI adoption.

Sukirman et al. [15] examined the impacts of managers' professional commitment and organizational commitment on job satisfaction. Their findings showed that higher professional commitment significantly enhances job satisfaction and managerial effectiveness, suggesting that commitment represents an important psychological resource for improving organizational performance. However, the study primarily focused on managerial employees and did not examine how work–life balance influences professional commitment within private healthcare organizations.

Yaosong and Keat [16] reviewed the role of professional commitment in explaining occupational stigma and turnover intention across professional occupations. The authors argued that stronger professional commitment mitigates the negative effects of occupational stigma by enhancing employees' professional identity and reducing turnover intention. However, the study is primarily conceptual and does not empirically examine how work–life balance and job satisfaction contribute to professional commitment in healthcare organizations.

Studies on healthcare professionals further indicate that professional commitment plays a vital role in maintaining service quality, ethical responsibility, and workforce stability. Health professionals with stronger professional commitment are more likely to deliver higher-quality patient care and demonstrate greater organizational loyalty. However, previous research has primarily examined public healthcare institutions, leaving private dental clinics largely unexplored despite the rapid adoption of digital technologies and artificial intelligence in healthcare services.

Overall, previous studies consistently support the positive relationships among work–life balance, job satisfaction, and professional commitment. However, existing evidence remains fragmented, with most studies examining these relationships separately or in nonhealthcare contexts. Furthermore, limited research has investigated how work–life balance and job satisfaction jointly influence professional commitment among employees in private dental clinics during the era of digital transformation and AI-driven healthcare. This study addresses these gaps by developing an integrated framework that explains professional commitment within this emerging organizational context.

In Vietnam, typical studies on this topic include: Vu et al. [17] examined the mediating role of organizational commitment in the relationship between high-performance work systems and organizational citizenship behavior among employees in multinational companies in Vietnam. The results show that organizational commitment partially mediates this relationship, suggesting that effective human resource practices can strengthen employee attachment and positive workplace behavior. This finding is relevant to private dental clinics because supportive HR systems may enhance job satisfaction and professional commitment in service-oriented healthcare settings.

Ngo and Tran [18] investigated how employees' perceptions of corporate social responsibility influence workplace behavior through organizational commitment in Vietnamese healthcare organizations. Their findings indicate that perceived CSR positively affects organizational commitment, which subsequently enhances organizational citizenship behavior, work engagement, and job-related improvement behavior. This study is particularly relevant because it confirms that healthcare employees' positive perceptions of organizational practices can strengthen commitment and constructive work behavior.

Pham and Ly [19] explored the effect of work–life balance on employee work performance in Vietnamese enterprises, with employee well-being as a mediating mechanism. Based on survey data from 399 employees in Hanoi, the study found that work–life balance significantly improves work performance, while hedonic and eudaimonic well-being mediate this relationship. This evidence supports

the argument that work–life balance may improve professional commitment indirectly by enhancing employees' psychological well-being and job-related attitudes.

Tran [20] examined determinants of work–life balance among teachers in Hanoi and neighboring provinces. The findings show that time management, support networks, and working from home positively influence work–life balance, whereas workload and childcare responsibilities negatively affect it. Although the study focuses on education, its findings are useful for private dental clinics because healthcare employees also face workload pressure, time constraints, and work–family conflicts in increasingly digitalized workplaces.

Nguyen et al. [21] analyzed the effects of COVID-19-related stress and organizational support on work–life balance and work engagement among Vietnamese managers at Samsung Display Vietnam. The results indicate that organizational support positively affects work–life balance and engagement, while Covid-19 stress has a negative effect. This finding is relevant to private dental clinics because digital transformation and AI-driven healthcare may increase work intensity, making organizational support essential for maintaining job satisfaction and professional commitment.

Overall, these Vietnamese studies provide useful evidence on work–life balance, organizational commitment, employee well-being, engagement, and positive workplace behavior. However, most of them were conducted in enterprises, education, multinational corporations, or general healthcare organizations rather than private dental clinics. Moreover, they rarely integrate work–life balance, job satisfaction, and professional commitment within the context of digital transformation and AI-driven healthcare. This study addresses these gaps by examining how work–life balance and job satisfaction contribute to professional commitment among employees in private dental clinics.

2.3. Hypothesis Development

2.3.1. Work–Life Balance and Professional Commitment

Work–life balance has been identified as a critical determinant of employee well-being and organizational commitment. In healthcare settings, long working hours and high job demands often lead to stress and burnout. However, supportive policies that enhance work–life balance can improve employee satisfaction and attachment to their profession. In the context of private dental clinics, where competition and service demands are high, maintaining a balance between work and personal life is essential for sustaining professional commitment.

H₁: Work–life balance positively affects professional commitment.

2.3.2. Job Satisfaction and Professional Commitment

Job satisfaction reflects employees' overall evaluation of their work experience, including both intrinsic and extrinsic factors. Prior studies consistently show that satisfied employees are more engaged and committed to their profession. In modern healthcare environments, job satisfaction is increasingly influenced by technological changes and organizational support. Employees who perceive their work as meaningful and rewarding are more likely to develop long-term professional commitment.

H₂: Job satisfaction positively affects professional commitment.

3. Methodology

The study employs a quantitative research design using survey data collected from 305 employees working in private dental clinics in Hanoi. The sample includes dentists, assistants, and administrative staff, providing a comprehensive view of workforce dynamics in the sector. Data were collected through structured questionnaires using a five-point Likert scale. To ensure data quality, incomplete responses were excluded, and the final dataset was screened for reliability and consistency. This sample size is adequate for statistical analysis and meets the requirements for regression modeling [22].

The study adopts a quantitative approach to examine the relationships among work–life balance, job satisfaction, and professional commitment. Measurement scales are adapted from validated studies to ensure reliability and validity (see Table 1). Reliability analysis is conducted using Cronbach's alpha,

followed by exploratory factor analysis (EFA) to assess construct validity. Correlation analysis is used to examine relationships between variables. Regression analysis is employed to test the proposed hypotheses. Diagnostic tests are conducted to ensure model validity, including multicollinearity and autocorrelation checks.

Table 1.

Scales for the independent and dependent variables.

Code	Description	Sources
Professional commitment (PC)		
PC1	I intend to remain in my current profession for a long time.	Allen and Meyer [23]
PC2	I feel emotionally attached to my profession.	
PC3	I would find it difficult to leave my current profession.	
Work-life balance (WLB)		
WLB1	Reasonable working hours	Our proposal is based on a group discussion with experts.
WLB2	Periodized rest periods	
WLB3	Work that does not negatively impact life	
Job satisfaction (SAT)		
SAT1	I am satisfied with my job.	Judge, et al. [24]
SAT2	I feel that my work is meaningful.	
SAT3	I am satisfied with the organization.	

Next, research the model (see Figure 1).

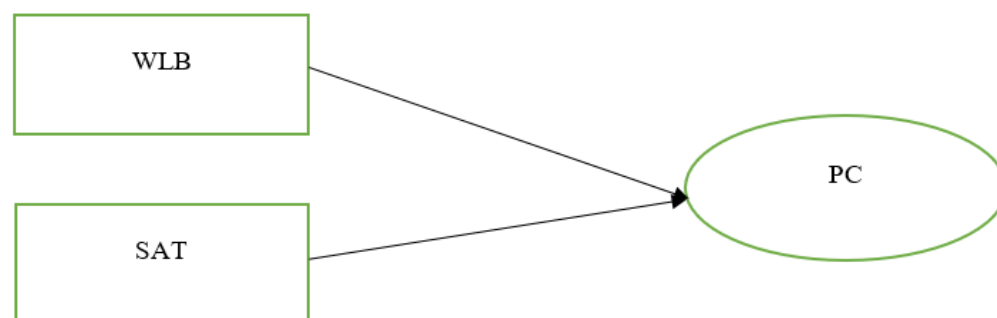


Figure 1.
Research model.

4. Results

4.1. The Quality Scale Analysis Result

Table 2 presents the reliability analysis results using Cronbach's alpha.

Table 2.

Analysis of the factors' confidence in the scales.

Determinants	N	Cronbach's Alpha	Corrected Item-Total Correlation
Work-life balance (WLB)	3	0.846	0.703
Job satisfaction (SAT)	3	0.749	0.534
Professional commitment (PC)	3	0.841	0.662

Source: Prepared by the authors (2025) and SPSS software.

The results in Table 2 indicate that all three constructs achieve acceptable reliability, with Cronbach's alpha values ranging from 0.749 to 0.846. Work-life balance ($\alpha = 0.846$) and professional commitment ($\alpha = 0.841$) show strong internal consistency, while job satisfaction ($\alpha = 0.749$) also exceeds the commonly accepted threshold of 0.70 [22, 25]. This suggests that the measurement scales are sufficiently reliable for subsequent analysis. From a managerial perspective, the results imply that

employees in private dental clinics perceive work–life balance, job satisfaction, and professional commitment as distinct but internally coherent dimensions of their working experience.

From an economic and managerial perspective, the reliability of the measurement scales provides a solid foundation for evaluating human resource factors that influence professional commitment in private dental clinics. Reliable measurements ensure that managerial decisions regarding work–life balance initiatives, employee satisfaction programs, and professional development strategies are based on consistent and credible evidence rather than random variation. In the context of digital transformation and AI-driven healthcare, this enhances the confidence of managers and policymakers in designing evidence-based workforce policies that improve employee retention, service quality, and the long-term sustainability of private dental clinics [22].

Table 3 reports detailed item-level reliability statistics.

Table 3.
Results of Cronbach's alpha testing of attributes and item-total statistics.

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Work-life balance (WLB): $\alpha = 0.846$				
WLB1	5.944	1.526	0.713	0.786
WLB2	5.843	1.633	0.703	0.799
WLB3	5.918	1.339	0.735	0.769
Job satisfaction (SAT): $\alpha = 0.749$				
SAT1	6.600	2.596	0.534	0.713
SAT2	6.538	2.592	0.540	0.707
SAT3	6.338	2.053	0.665	0.555
Professional commitment (PC): $\alpha = 0.841$				
PC1	6.075	1.708	0.771	0.714
PC2	6.030	2.095	0.662	0.823
PC3	6.059	1.825	0.694	0.792

Source: Prepared by the authors (2025) and SPSS software.

Table 3 provides item-level reliability statistics and shows that all corrected item-total correlations are above the minimum threshold of 0.30. This confirms that each observed item contributes meaningfully to its corresponding construct [22, 25]. The results also show that removing any item would not substantially improve the reliability of the scales. Economically, this implies that the survey items capture important aspects of employment relationships in private dental clinics, where working hours, rest arrangements, meaningful work, organizational satisfaction, and long-term professional attachment are all relevant to workforce stability.

4.2. Exploratory Factor Analysis (EFA)

Table 4 presents the KMO and Bartlett's test results.

Table 4.
KMO and Bartlett's Test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.721
Bartlett's Test of Sphericity	Approx. Chi-Square	682.907
	Df	15
	Sig.	0.000

Source: Prepared by the authors (2025) and SPSS software.

The KMO value of 0.721 indicates that the sample is adequate for exploratory factor analysis. In addition, Bartlett's test of sphericity is statistically significant ($p < 0.001$), confirming that the observed variables are sufficiently correlated to justify factor extraction [22, 25]. These results demonstrate that the dataset has an appropriate structure for identifying latent factors. In the context of private dental

clinics, this suggests that employees' perceptions of work–life balance, job satisfaction, and professional commitment are interrelated and can be meaningfully examined using factor analysis.

Table 5.
Total Variance Explained.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Total	% of Variance	Cumulative %
1	2.740	45.667	45.667	2.740	45.667	2.280	38.001	38.001
2	1.624	27.074	72.741	1.624	27.074	2.084	34.740	72.741
3	0.622	10.362	83.103					
4	0.398	6.626	89.729					
5	0.337	5.609	95.338					
6	0.280	4.662	100.000					

Source: Prepared by the authors (2025) and SPSS software.

Table 5 shows that two extracted components explain 72.741% of the total variance, exceeding the commonly accepted benchmark of 50%. This indicates that the extracted factors have strong explanatory power and adequately represent the underlying structure of the data [22, 25]. The high cumulative variance also suggests that the constructs used in the study capture a substantial proportion of employees' workplace perceptions. In practical terms, the results reinforce the relevance of work–life balance and job satisfaction as core explanatory factors of professional commitment in the private dental clinic sector.

From an economic and managerial perspective, the high cumulative variance explained indicates that work–life balance and job satisfaction capture the major dimensions influencing professional commitment in private dental clinics. This suggests that managers can prioritize these two factors when designing human resource policies, as improvements in employees' work–life balance and job satisfaction are likely to generate substantial gains in professional commitment. In the context of digital transformation and AI-enabled healthcare, investing in employee well-being and supportive workplace practices may contribute to workforce stability, service quality, and the long-term competitiveness of private dental clinics [22].

4.3. Correlation Analysis Results

Table 6 presents correlation results.

Table 6.
Correlation between independent and dependent variables.

Description		Professional Commitment (PC)	Work–Life Balance (WLB)	Job satisfaction (SAT)
Professional Commitment (PC)	Pearson Correlation	1	0.237**	0.222**
	Sig. (2-tailed)		0.000	0.000
	N	305	305	305
Work–Life Balance (WLB)	Pearson Correlation	0.237**	1	0.259**
	Sig. (2-tailed)	0.000		0.000
	N	305	305	305
Job Satisfaction (SAT)	Pearson Correlation	0.222**	0.259**	1
	Sig. (2-tailed)	0.000	0.000	
	N	305	305	305

Source: Prepared by the authors (2025) and SPSS software

The correlation results in Table 6 reveal positive and statistically significant relationships between professional commitment and both work–life balance ($r = 0.237^{**}$, $p < 0.001$) and job satisfaction ($r = 0.222^{**}$, $p < 0.001$). Although the correlation coefficients are modest, they indicate that employees who

perceive better work–life balance and higher job satisfaction tend to report stronger professional commitment. The positive correlation between work–life balance and job satisfaction ($r = 0.259^{**}$, $p < 0.001$) also suggests that balanced working arrangements may contribute to employees' overall satisfaction [22, 25]. In the current context of digital dentistry and growing service competition, these relationships are important because employee stability and commitment directly influence service quality and patient experience.

The symbol ** indicates that this pair of variables has a linear correlation at a 99% confidence level (corresponding to a significance level of $1\% = 0.01$).

4.4. Result of Regression Model Analysis

Tables 7, 8, and 9 present regression results.

Table 7.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.289 ^a	0.083	0.077	0.63318	1.629

Note: a. Predictors: (Constant), SAT, WLB

b. Dependent Variable: PC

Source: Prepared by the authors (2025) and SPSS software.

Table 8.

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	11.027	2	5.514	13.752	0.000 ^b
	Residual	121.079	302	0.401		
	Total	132.106	304			

Note: a. Dependent Variable: PC

b. Predictors: (Constant), SAT, WLB

Source: Prepared by the authors (2025) and SPSS software.

Table 9.

Regression model.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.892	0.220		8.617	0.000		
	WLB	0.215	0.064	0.192	3.367	0.001	0.933	1.072
	SAT	0.155	0.051	0.172	3.012	0.003	0.933	1.072

Note: a. Dependent Variable: PC

Source: Prepared by the authors (2025) and SPSS software.

Tables 7, 8, and 9 present the regression model summary, ANOVA results, and coefficient estimates. The model explains 8.3% of the variance in professional commitment, with an adjusted R^2 of 7.7%. Although this explanatory power is relatively modest, it is meaningful in behavioral and human resource research, where employee attitudes are often influenced by multiple psychological, organizational, and contextual factors. The ANOVA results confirm that the model is statistically significant ($F = 13.752$, $p < 0.001$), indicating that work–life balance and job satisfaction jointly explain professional commitment [22, 25].

The coefficient estimates show that both work–life balance ($\beta = 0.192$, $p = 0.001$) and job satisfaction ($\beta = 0.172$, $p = 0.003$) have positive and statistically significant effects on professional commitment [22, 25]. Work–life balance has a slightly stronger standardized effect than job satisfaction, suggesting that employees in private dental clinics may place particular value on reasonable working hours, rest periods, and reduced work–life conflict. Economically, this finding implies that clinic owners and managers can strengthen professional commitment not only through compensation

but also through workforce scheduling, workload design, and supportive working conditions. The VIF values of 1.072 indicate that multicollinearity is not a concern.

Next, Table 10 presents the results of testing the research hypotheses.

Table 10.

Results of testing the research hypotheses.

No.	Hypotheses	Test results	Trends of influence
1	H1	Accept	+
2	H2	Accept	+

From an economic and managerial perspective, the acceptance of both hypotheses indicates that professional commitment can be strengthened through improvements in employees' work-life balance and job satisfaction. These findings suggest that human resource investments aimed at creating supportive working conditions, reducing work-family conflict, recognizing employee contributions, and enhancing workplace satisfaction are likely to generate long-term organizational benefits. In the context of digital transformation and AI-driven healthcare, stronger professional commitment may improve employee retention, service quality, organizational resilience, and the sustainable competitiveness of private dental clinics. These results also highlight that workforce well-being should be regarded as a strategic investment rather than merely an employee welfare initiative.

The empirical support for both hypotheses also reinforces the applicability of Social Exchange Theory and the Job Demands-Resources (JD-R) model in explaining employees' professional commitment within technology-intensive healthcare environments [2].

Figure 2 presents the standardized residual distribution of the regression model. This diagnostic figure is used to examine whether the residuals are approximately normally distributed, which is important for assessing the validity of regression assumptions.

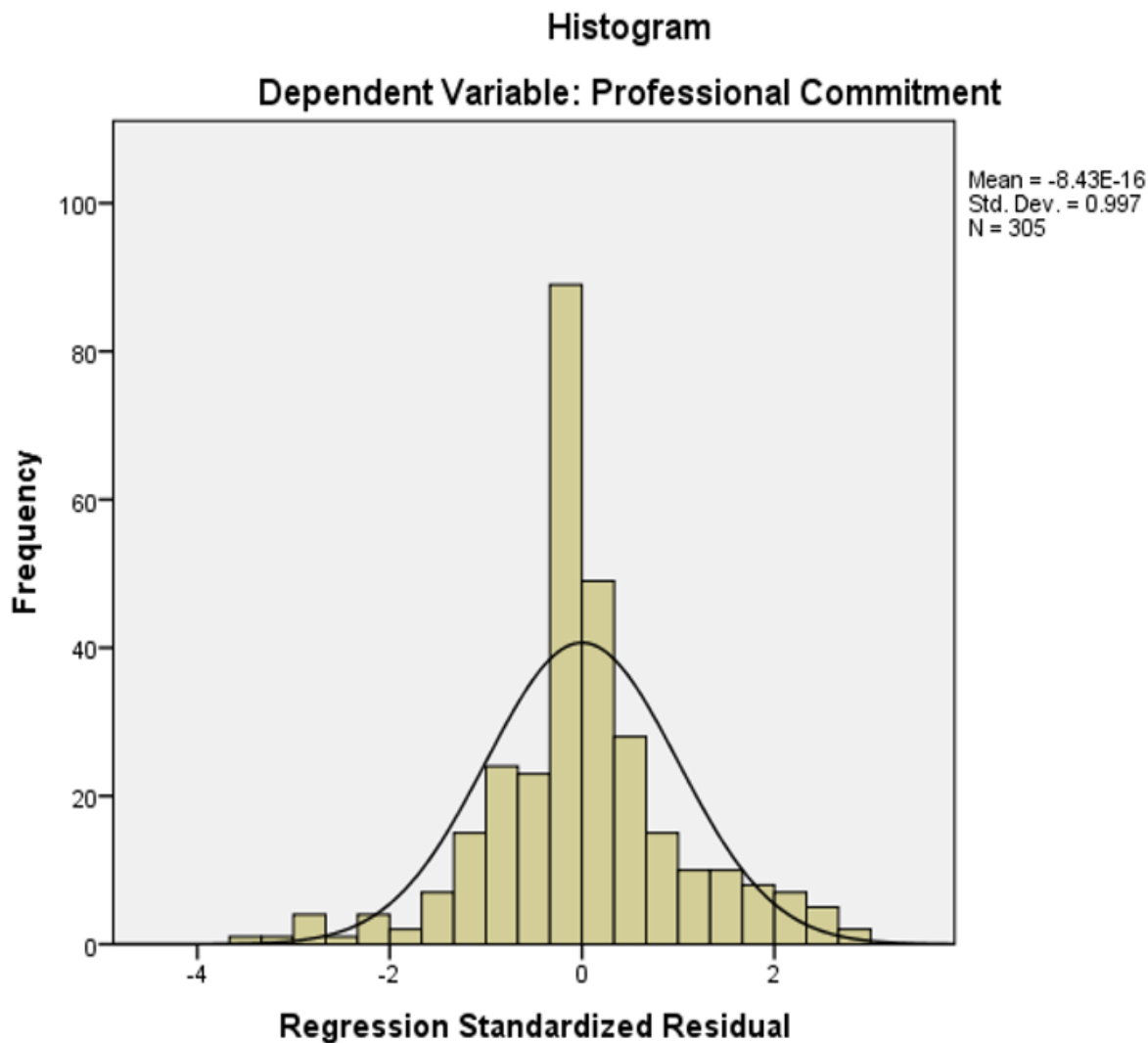


Figure 2.
Regression Standardized Residual.

The residual distribution shown in Figure 2 suggests that the regression residuals are reasonably distributed around the expected normal pattern. Although minor deviations may exist, the overall distribution does not indicate severe violations of the normality assumption. This supports the reliability of the regression results. In applied HRM research, such diagnostic checks are important because they help confirm that the estimated relationships between work–life balance, job satisfaction, and professional commitment are not driven by abnormal residual patterns.

Figure 3 illustrates the relationship between standardized predicted values and standardized residuals. This figure is used to assess whether the residuals are randomly distributed and whether the model suffers from serious heteroscedasticity.

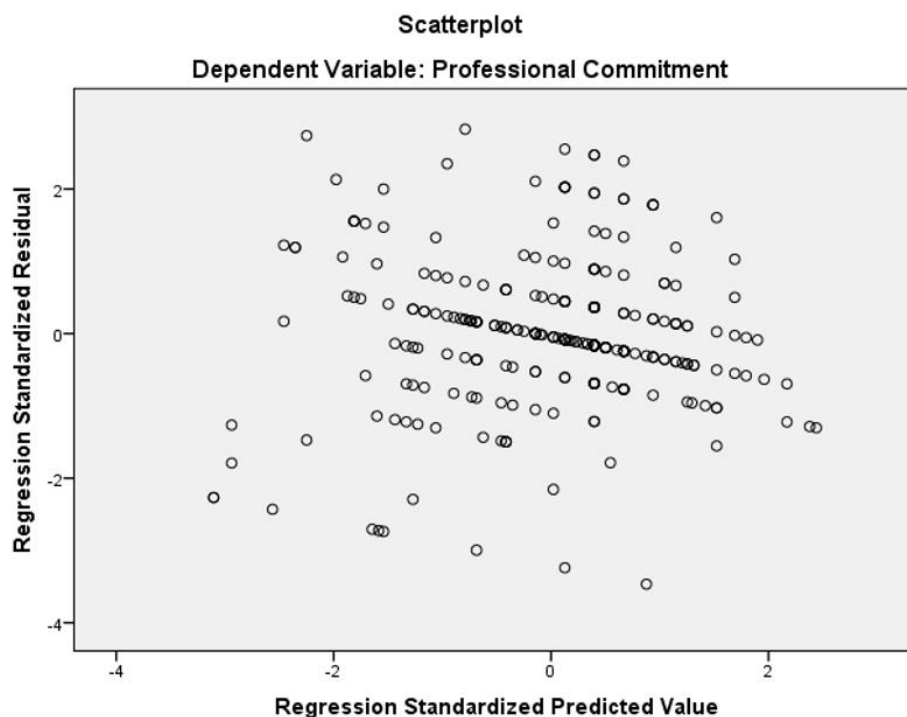


Figure 3.
Regression Standardized Predicted Value.

The scatterplot in Figure 3 indicates that the residuals are dispersed without a clearly systematic pattern. This suggests that the regression model does not exhibit serious heteroscedasticity. Therefore, the estimated coefficients can be interpreted with greater confidence. From a methodological perspective, this strengthens the credibility of the findings and supports the conclusion that work–life balance and job satisfaction are meaningful predictors of professional commitment in private dental clinics.

4.5. Discussion

The findings are consistent with prior studies in healthcare and service sectors. The positive impact of work–life balance aligns with JD-R theory and empirical studies [5]. Similarly, the effect of job satisfaction supports Herzberg’s theory and previous research.

However, this study extends the literature by focusing on private dental clinics in an emerging-market context. The results also highlight the role of digital transformation, which introduces both opportunities and challenges for employees.

5. Implications

First, managers of private dental clinics should recognize work–life balance as a strategic human resource factor rather than a purely welfare-related issue. The empirical results show that work–life balance has a positive and significant effect on professional commitment. In the current context, dental clinics face intense competition, longer service hours, high patient expectations, and increasing pressure to adopt digital and AI-assisted technologies. Therefore, managers should design more flexible schedules, ensure adequate rest periods, and prevent excessive workload. These practices can reduce burnout risk, improve employee well-being, and strengthen long-term professional attachment.

Second, clinic owners should improve job satisfaction by creating a more supportive, meaningful, and professionally rewarding work environment. Employees in dental clinics are not only service

workers but also participants in a healthcare process that requires technical skills, emotional labor, and continuous learning. Job satisfaction can be improved through fair evaluation, professional recognition, better communication, and opportunities for skill development. In particular, as digital imaging, intraoral scanning, CAD/CAM systems, and AI-assisted tools become more common in dentistry, employees need organizational support and training to adapt effectively. Recent studies suggest that digital technologies in dental practice can improve efficiency but also require appropriate education and change management.

Third, private dental clinics should invest in digital competence development as part of their human resource strategy. The adoption of biomedical technologies and AI-driven dental tools can improve diagnosis, treatment planning, workflow efficiency, and patient experience. However, if employees are not adequately trained, technology adoption may increase stress and reduce satisfaction. Therefore, clinics should combine technology investment with employee-centered training programs. This is especially important because recent dental studies indicate that AI-powered and digital tools are increasingly linked with job satisfaction, communication efficiency, and burnout prevention in dental work environments.

Fourth, policymakers and professional associations should support the development of human resources in private dental care. The rapid expansion of private dental clinics in Hanoi creates new opportunities but also raises concerns about service quality, workforce stability, and professional standards. Regulatory bodies and professional associations should encourage continuing professional education, digital health training, and ethical standards in patient care. Such measures would help strengthen the sustainability of the private dental market while ensuring that technological innovation is aligned with professional competence and employee well-being.

6. Conclusion

This study examines the effects of work–life balance and job satisfaction on professional commitment among employees in private dental clinics in Hanoi. The findings show that both work–life balance and job satisfaction have positive and statistically significant effects on professional commitment. These results confirm that professional commitment in private dental clinics is influenced not only by employees' emotional attachment to their profession but also by the quality of their working conditions and overall job experience. In the current context of digital transformation, AI adoption, biomedical technology development, and intense competition in the dental service market, maintaining a committed workforce is essential for improving service quality, patient trust, and organizational sustainability.

This study has several limitations. First, the sample is limited to employees in private dental clinics in Hanoi, which may restrict the generalizability of the findings to other healthcare sectors or geographic regions. Second, the model includes only two explanatory variables, work–life balance and job satisfaction, while professional commitment may also be affected by leadership style, compensation, organizational culture, digital competence, burnout, and career development opportunities. Third, the study uses cross-sectional survey data, which limits causal interpretation. Future research should expand the sample to other provinces and healthcare sectors, incorporate digital transformation and AI-related variables, and apply longitudinal or mixed-method designs to better understand how technological change affects employee well-being and professional commitment over time.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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